UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
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June 3, 2013

Mr. Eric Summa, Chief
Environmental Branch,
Department of the Army
Jacksonville District Corps of Engineers
P.O. Box 4970
Jacksonville, FL 32232-0019

SUBJECT: Draft Integrated Feasibility Report and Environmental Impact Statement (FR/EIS), Lake Worth Inlet, Palm Beach Harbor, FL. CEQ No. 20130093

Dear Mr. Summa:

To fulfill the U.S. Environmental Protection Agency's (EPA's) Clean Air Act (CAA) § 309 and National Environmental Policy Act (NEPA) § 102(2)(C) responsibilities, the EPA has reviewed the above DEIS for the above proposed action by the U.S. Army Corps of Engineers (USACE): the FR/EIS (or 'DEIS').

Background

Lake Worth Inlet is the entrance channel to the Port of Palm Beach harbor connecting Lake Worth, a coastal lagoon with the Atlantic Ocean. The Port is located in Riviera Beach, Palm Beach County, Florida. The port consists of four wharves, 3 slips, and 17 berthing areas, and 156 acres of land.

Purpose & Need: The proposed action's objectives are to reduce transportation costs, caused by vessel light loading, tidal delays, or insufficient depth in the main turning basin and from the entrance channel to the inner channel; reduce navigation concerns and improve vessel safety in the harbor relating to insufficient width; and maintain or improve operations and maintenance dredging intervals within the Federal channel.

Description: The proposed action appears to have several components including deepening the inner channel from 33 to 39 feet, the entrance channel from 35 to 41 feet, and the Main Turning Basin from 33 to 39 feet and widening portions of the navigation channel.

Alternatives: This DEIS evaluated the *No Action* alternative, nine widening alternatives including a widening only alternative, and 10 deepening and widening alternatives at one foot depth increments from 34 to 43 feet.

Environmental Impacts: The widening of the channel component of the proposed action is the feature causing impacts to adjacent coastal seagrass and hardbottom communities within jurisdictional waters of the U.S. There are also potential short-term and long-term impacts to

water quality from construction and dredging activities, including salt-water intrusion. Additional information is needed concerning potential air quality impacts.

***EPA Summary Comments*:**

Under § 309, EPA is directed to review and comment publicly on the environmental impacts of Federal activities, including actions for which environmental impact statements are prepared. EPA is assigning this DEIS with an "Environmental Concerns" (EC-2) rating (Please see enclosed "Summary of the EPA Rating System") primarily for the requirement of additional information to understand the proposed action's need and its potential environmental impacts. EPA's review has identified specific natural resources impacts that should be avoided in order to fully protect the environment.

EPA has provided the enclosed specific technical comments to assist the District's preparation of the final EIS (FEIS). The DEIS made conclusions that were not always supported by the data provided. The enclosed comments highlight some of the issues that are identified for the purposes of the drafting the FEIS. Additional data should be provided in the FEIS that documents and addresses EPA's environmental concerns. EPA is also requesting additional information on proposed mitigation sites for potential impacts to waters of the U.S.

EPA recognizes the FR/EIS is one of four national pilots pursuant to the Deputy Commanding General for Civil and Emergency Operations' directive to complete all (new) feasibility studies within 18 months but no more than three years, at a cost of no more than $3 million, and of a 'reasonable' report size. EPA supports the USACE's effort to streamline its process. EPA also appreciates and recognizes the demands placed upon the District to prepare it with tight time and resource constraints. In general, EPA finds this pilot product lacks some of the data and supporting analyses that the USACE Jacksonville District typically provides in NEPA compliance efforts for its proposed projects. EPA is willing to provide further technical assistance during the USACE's preparation of the FEIS.

Thank you for the opportunity to review the DEIS. If you wish to discuss this matter further, please contact Beth Walls (404-562-8309 or walls.beth@epa.gov) or Christopher Militscher (404-562-9512 or militscher.chris@epa.gov) of my staff.

Sincerely,

Heinz J. Mueller, Chief
NEPA Program Office
Office of Environmental Accountability

Enclosure: Technical comments on Lake Worth FR/EIS
Summary of EPA's rating system

EPA Technical Comments on Draft FR/EIS
Lake Worth Inlet, Palm Beach Harbor, FL
CEQ No.: 20130093

Need

- **Clear identification of the need:** The FEIS should provide a section clearly identifying the need and purpose of the proposed action consistent with CEQ's NEPA regulations.
  - Information relevant to the need and proposed action are scattered throughout the document. EPA was required to review and evaluate numerous sections of the document to form a coherent understanding of the proposed project's purpose and need. For example, Figure ES-4 located in the executive summary is the only place where specific information on existing conditions and the proposed action's depth and widening seems to be provided. This information was not fully discussed in the alternatives discussions. See Alternatives and General comments below.
  - Conclusions from the different discussions were not supported by the appropriate economical and environmental information.
  - The Table of contents indicates Chapter 1 addresses the proposed action's need. While the word, *need*, is used several times in the pictures comprising Chapter 1, there is no clear explanation of the need or purpose.
- **Clear Identification of how the need has been addressed:** The FEIS should make it clear how the need is best addressed by the tentatively selected plan. For example, the DEIS describes how the ebb and flood tide and the Gulf Stream current have an important impact upon navigation (p. 2-1 and p. 2-16) resulting in navigation restrictions (summarized in Table 2-2). However, there is no discussion of how the proposed action will address these navigation restrictions and potentially improve upon the existing tide and current constraints.

Economics Analysis

- **Existing versus Projected Economy:** The FEIS should clarify whether the economic analysis demonstrating need and its national economic development and regional economic development accounts analyses are based upon existing port business or reflect expected increase in port business resulting from the proposed action. The DEIS is unclear with respect to the existing and future economy.
- **Need based on Non-Growth Commodities**: The FEIS should explain when compared to the containerized goods commodity type, why the DEIS focused on those commodities: cement, molasses, and petroleum, appearing to demonstrate minimal to no growth to demonstrate the proposed action's economic need and the selected design vessel type for the ship simulation study. See also Alternatives, **Ship Simulation** comments below.
  - Cement: is the only commodity demonstrating some growth of the three commodities listed. The DEIS forecasts a cement-import volume for 2067 of approximately 90,000 metric tons greater than that for 1997, which was approximately 250,000 metric tons. (Figures 2-2 & 2-3)
  - Molasses: the 2067 forecasted export of 265,000 metric tons of molasses is less than the 2002 peak export volume of approximately 350,000 metric tons. (Figures 2-2 & 2-3)

- Petroleum: the 2067 petroleum import projection of 348,000 metric tons is significantly less than the 2001 peak export volume of approximately 1,350,000 metric tons (Figures 2-2 & 2-3).
- Neither figure 2-2 nor 2-3 provide forecasted projections for the containerized-goods commodity type. See **missing information** comment below.
- According to Figure 2-1, cement, molasses, and petroleum combined accounted for 38 percent of the tonnage moving through the port compared to 37 percent associated with the containerized-goods commodity type. Cement, molasses, and petroleum combined accounted for 6.2 percent of the total vessel calls compared to the 73 percent represented by the containerized-goods commodity type.

- **Missing Information:** The Economic Environment Section (2.2) is lacking key economic information.
  - **Commodity Movement Forecasts:** The FEIS should provide commodity movement forecasts, i.e., include containerized cargo data in Figures 2-2 and 2-3. In the DEIS, neither figure contains commodity movement forecasts for containerized cargo. Containerized cargo represents the Port's largest tenant, Tropical Shipping, and according to Figure 2-1, the largest tonnage passing through the port and vessel call number.
  - **Commodity Economic Value Omission:** The FEIS should compare the economic value per ton of each commodity type analyzed in Section 2, Figure 2-1. While cement, molasses, petroleum, and sugar products are dense commodities by nature and would be expected to comprise a higher percent of the tonnage, it is unclear whether they are more valuable than the containerized cargo passing through the port. This information appears relevant to the determination of the proposed action's need and both the national and regional economic development accounts used to determine the tentatively selected plan. See Alternatives, **Alternative Plan Evaluation** comments below.
    - While Figure 2-1 compares the *2007 commodity type tonnage* with the *2007 vessel calls*, no information is provide on the 2007 commodity value for the respective commodities identified. Here, the *other* commodity category (cement, molasses, petroleum products, and sugar) are demonstrated to constitute 60 percent of the tonnage and 10 percent of the vessels calling at the port while the *containerized goods* category represents 37 percent of the tonnage and 73 percent of the vessel calls. Absent is the economic value of the *other* compared to the *containerized goods* commodities. Moreover, the Port's largest tenant and shipper of containerized goods, Tropical Shipping appears to provide half of the annual revenue at the Port of Palm Beach.[1]
  - **Sugar Data Omission:** The FEIS should explain why an important Port export commodity, sugar, was omitted from the economic need analysis and port deepening and widening alternatives analysis of Chapter 2, but discussed in Chapter 5 in context of the Tentatively Selected Plan's (TSP's) impacts.
    - 100% of the exported raw sugar produced in the Glades area, almost 900,000 tons, is shipped through the Port of Palm Beach.[2]
    - Section 2.2.1 indicates sugar is one of the four commodities comprising 60 percent of the tonnage passing through and 10 percent of the vessels calling at the Port.
      - Figure 2-1 indicates sugar's tonnage is 22 percent, greater than cement and molasses combined (10 percent) and second to petroleum imports at 28 percent.
      - Figure 2-1 indicates sugar represents 3.9 percent of the vessel calls, greater than cement and molasses combined (1.4 percent) and second to petroleum vessel calls at 4.8 percent.

- Vessels carrying sugar are omitted from the ship simulation study which selected the bulk design vessel representing the molasses and liquid petroleum-sized tanker and the cement bulk vessels.
- Figure 2-3 omits sugar export projections while Figures 2-1 and 2-2 provide sugar tonnage, vessel call, and annual cargo tons through the port information.
- Table 2-1 omits sugar from the draft constrained vessel characteristics by vessel type. The FEIS should clarify:
  - Whether sugar is omitted because its vessels are not draft constrained and that is why Table 5-1 indicates this commodity will not benefit from the proposed action.
  - Sugar does not appear to benefit from the proposed action. A rationale as to why it was included into the "other" category of Figure 2-1 should be provided in the FEIS.
  - Sugar is, however, included in the major bulk commodity tonnages associated with the deepest draft vessels calling at the port. (See Figure 2-2 and the first sentence on the page 2-3, which indicates Figure 2-2 reflects the deepest draft vessels calling at the port). A rationale for its inclusion in this general category should be included in the FEIS.
  - After subtracting sugar from the commodities requiring the deepest draft vessels, the proposed action appears to be focused on deep draft shipment of commodities representing 38 percent (not 60%) of the port's tonnage and 6.2 percent (not 10.1%) of the port's total vessel calls. (Figure 2-1)
- **Omission of the Rail Alternative:** The costs of shipping cement, molasses, petroleum, and sugar by rail to and from neighboring ports of Canaveral, Everglades, and Miami compared to the costs of the proposed action should be provided. A rail alternative comparing the deepening and widening alternative plus the corresponding need for the north jetty stabilization were not discussed in the DEIS. This information is relevant to the proposed action's need. See also Alternatives comments below.

- **Inconsistencies in Tropical Shipping Vessel Information:** The FEIS should address the discrepancies identified in the DEIS as described below.
  - The DEIS refers to Tropical Shipping chartering a vessel with a 1,524 TEU capacity and 32.5 foot design draft to meet spikes in demand and states some of the largest container ships in Tropical's fleet *will likely increase in size to take advantage of economies of scale.*[3]
    - Tropical purchased in 2011 the *Tropic Express,* a ship designed to be a shallow draft vessel to transport both dry and refrigerated containers between Florida and the Bahamas.[4] This recent purchase appears to contradict the *likely increase in vessel size* prediction. According to Tropical Shipping, the *Express* has a 368 TEU capacity.[5]
    - Tropical Shipping's recent closure and consolidation of its Riviera Beach Warehouse in Palm Beach County into its Miami Warehouse appears to reflect Tropical Shipping's adaptability to economic conditions, like the recent global recession.
    - Tropical shipping appears to operate out of Port Miami.[6] Port Miami is scheduled to undergo sufficient deepening to accommodate those larger vessels, like the Dorian when Tropical Shipping determines a need to charter a larger vessel to address spikes in demand. The Port of Miami has rail access to facilitate a rail alternative. See Alternatives, **Full Array of Alternatives** comments below.
    - Table 2-1 indicates all *other* commodities, i.e., containerized goods, are shipped in vessels with an average design draft of 14.3 feet, which appears well within the No

Action Alternative conditions, an operating draft of -33 feet MLW.[7] The port deepening projects scheduled for ports Miami and Everglades will make them available via rail access to potentially handle the sporadic peak loads in shipping.

- It is unclear whether the proposed action is being proposed to handle peak shipping loads reflected in the expansion phase of the global economy's growth and recession cycle. It is unclear from the DEIS that the true purpose of the project is to facilitate light loading by large vessels because vessel manufacturers continue to make larger and larger vessels.

- **DWT:** Chapter 5 introduces a new volume measure, DWT (Dry Weight Tonnage). Table 5-1 discusses commodity volume in context of thousands of metric tons. Chapter 2 discusses some commodities in context of TEUs. The FEIS should explain the use of all these different volume measures and how to correlate them into the need for the proposed action. See comments regarding consistent use of terminology in the General Comments section below.
- **Compound Annual Growth Rate**: Table 5-1 provides no explanation how to interpret CAGR in the context of Chapter 5.
  - The FEIS should explain the compound annual growth rate (CAGR) column and how the percent values in the column are derived. The DEIS mentions CAGR in Figure ES-2, Chapter 2, p. 2-3, then for the first time provides CAGR values in Table 5-1, Chapter 5 without explaining the CAGR's value and why it is specifically being used.
  - The FEIS should explain why molasses but not sugar shipments are a benefitting commodity from the proposed action. Table 5-1 indicates more sugar volume (790,000 metric tons) is being shipped through the port than molasses (265,000 metric tons) during the 2017 - 2067 period. It is unclear in the DEIS why sugar is not considered to be a benefiting commodity.
    - Chapter 2, Table 2-1 does not include sugar in the list of commodities having draft constrained vessel characteristics by vessel type. Sugar's omission from this table indicates (as reflected in Table 5-1) that it is one commodity that will not benefit from the proposed action as sugar-carrying vessels do not need the proposed action in order to efficiently operate.
    - However, Chapter 2 includes sugar in Figure 2-1 to create a category called "other," which is represented as the commodity having the largest tonnage passing through the port.
    - Chapter 2 also includes sugar in Figure 2-2's annual cargo tons through the port for the 1996-2008 period and the associated text indicates that Figure 2-2 depicts the major bulk commodity tonnages for this period associated with the deepest draft vessels calling at the port. This could imply that the sugar commodity is transported in a draft constrained vessels. See comments regarding contradictions and inconsistencies in the General Comments section below.
    - Figure 2-2 indicates the greatest volume of sugar exports occurred in 2002 at 1,100,000 metric tons. In 2002, the number of vessels estimated to have called at the port ranges from 36.7 to 31.4 (using the 30,000 to 35,000 DWT which Chapter 5 states is the largest self-propelled vessels that can fully load under the no action conditions).
    - Table 5-1 indicates sugar's future with project commodity forecast is 790,000 metric tons. Under no action conditions, it is estimated 22.5 to 26.3 vessels would be required to transport this volume.
  - The FEIS should explain whether the commodity forecasts are such that a 50,000 DWT would be filled or would be operating at partial capacity. If commodity forecasts are such

that a 50,000 DWT vessel would not be filled to capacity, then would it still require a deeper channel. The DEIS fails to connect the commodity volume (e.g., Table 5-1), to the ship type needed to transfer its volume most efficiently. The FEIS should explain for a commodity like molasses, whose export volume is projected to be static at 265 thousands of metric tons for the period 2017 – 2067, and this projected volume is less than its year 2002 peak of over 300 thousand metric tons, what type of vessel is expected to call. The FEIS should explore the issue of vessel size: Will it be a large vessel leaving lightly loaded or will the same vessel which is calling now continue to call (particularly in light of Table 2-1 which indicates molasses vessels call at the port on average 8 times a year)?

Alternatives

- **Full Array Of Alternatives:** Consistent with the Corps' SMART guidance and NEPA's requirements to consider and evaluate a full array of alternatives, the FEIS should consider in lieu of deepening and widening, the alternative where commodities (sugar, molasses, petroleum and cement) shipped in the deeper draft vessels are shipped by rail to and from Ports Everglades and Miami.

  The Port Miami on-port rail has links to the national rail system and expects the railway service to move goods to 70 percent of the nation's population in four days or less.[8] Moreover, Port Everglades is the main south Florida seaport for receiving petroleum products[9] having the nation's second-largest non-refinery petroleum storage tank farm, serving 12 south Florida counties.[10] Port Everglades close proximity facilitates the Port of Palm Beach's use of its more powerful tug boats when needed. Consequently, the ship simulation study used the Port of Everglades' tug class for its third design vessel category (p. 3-5).

  The Port of Palm Beach's largest tenant, Tropical Shipping also appears to operate out of Port Miami[11] having access to rail service for any of its ships requiring a deeper draft. Moreover in 2010, Tropical Shipping closed its warehouse in Palm Beach County to consolidate its operations in Miami in response to the 2008 global recession.[12]

  Additionally, Port Canaveral's primary cargos include liquid petroleum and it is one of the three busiest cruise ports in the world.[13] Port Tampa is a major bulk port, handling cement[14] with petroleum and related products representing its largest-volume commodity sector: 16 million tons of oil, gas and jet fuel move through this port in a typical year.[15]

- **Widening Measures**: (see pp. 3-4 – 3- 6): The FEIS should explain the difference between management measure and alternatives. It is unclear whether the widening *Measures* discussion is the same as the NEPA required *Alternatives.* EPA supports integrating the Feasibility Study with the NEPA document in a clear manner, see Editorial comments below.
  - The FEIS should provide a figure to facilitate comparison between the nine widening measures (alternatives) discussed and the no-action alternative (existing conditions) to facilitate narrative understanding of the widening measures and alternatives comparisons.
  - The FEIS should provide a summary impacts table comparing each alternative in the final array, including the no-action, economic and environmental impacts to facilitate comparisons between alternatives consistent with CEQ'S NEPA regulations.

- The FEIS should provide a clear explanation of how each of the final array alternatives improves upon existing conditions and address the identified need.

- **Ship Simulation**
  - The DEIS indicates the bulk design vessel was one of three selected design vessel categories for ship simulation purposes. The bulk vessel represents the size of the molasses and petroleum tankers and cement bulk vessels which account for a large portion of total port tonnage, the most draft-constrained and the least maneuverable vessels requiring tug assistance.
    - The FEIS should address the inconsistency between the data and the DEIS' conclusion that the bulk design vessel represents a large portion of the forecasted total port tonnage.
      - Cement –
        - For 2067, the DEIS forecasts a cement-import volume of approximately 90,000 metric tons greater than the 1997 cement volume import peak of approximately 250,000 metric tons (Figures 2-2 and 2-3).
        - Cement imports currently account for only 4 percent of total port tonnage and 0.6 percent, of total port vessel calls (Figure 2-1).
        - The FEIS should discuss the likelihood of larger than existing vessels being used to transport a moderate increase in the forecasted cement import volume and the associated impacts. The FEIS should include the appropriateness for using the cement vessel as a basis for ship simulation. Additionally, the FEIS should also address whether the average annual number of vessel calls will be reduced from five (Table 2-1).
      - Molasses –
        - The DEIS forecasts an 165,000 metric-ton increase in molasses for 2017 to 265,000 metric tons, which is significantly less than the 2002 peak export volume of approximately 350,000 metric tons. Moreover, the 2067 forecasted molasses import volume projection is static at 265,000 metric tons (Figures 2-2 and 2-3).
        - Molasses exports currently only account for 6 percent of total port tonnage and 0.8 percent of total port vessel calls (Figure 2-1).
        - The FEIS should discuss the likelihood of larger than existing vessels being used to transport a decrease in forecasted molasses export volumes and the associated impacts. The FEIS should address the appropriateness for using a molasses tanker as a basis for ship simulation. Moreover, the FEIS should also address whether the average annual number of vessel calls will be reduced from eight (Table 2-1).
      - Petroleum –
        - The DEIS' 2067 forecasts a petroleum import volume of 348,000 metric tons and significantly less than the 2001 peak export volume of 1,350,000 metric tons. Moreover, a 165,000 metric-ton decrease in fuel oil/liquid petroleum imports is forecasted between 2008 and 2017 (Figures 2-2 and 2-3).
          - The DEIS also indicates fuel oil was a large percentage of port traffic but a large reduction in fuel oil receipts has occurred associated with the Riviera Beach Generating facility conversion to natural gas (p. 2-8).
        - Petroleum imports currently account for 28 percent of total port tonnage and 4.9 percent of total port vessel calls (Figure 2-1).

- The FEIS should discuss the likelihood of larger than existing vessels being used to transport the forecasted decrease in petroleum import volumes. The FEIS should include the appropriateness for using the petroleum tanker as a basis for ship simulation. Moreover, the FEIS should also address whether the average annual number of vessel calls will be reduced from 43 (Table 2-1).

- The DEIS indicates diesel fuel is received in substantial quantities without citing the volume or supporting economic information. (p. 2-8)
  - The FEIS should identify the markets using the diesel fuel being imported and the volume being consumed or imported to meet market demand.
- The DEIS appears to assume a future increase in diesel fuel imports similar to the projected general demand for energy in the transportation sector.
  - The FEIS should address the likelihood of petroleum being tanked to this port in the context of the much larger Ports Everglades, Canaveral, and Tampa that have, unlike Port of Palm Harbor, existing bulk petroleum storage and access to rail to serve the south and central Florida areas.
    - Port Everglades is the main south Florida seaport for receiving petroleum products[16] and has the nation's second-largest non-refinery petroleum storage tank farm, serving 12 south Florida counties.[17]
    - Port Canaveral's primary cargos include liquid petroleum and dry cement.[18]
    - Port Tampa has a petroleum terminal complex providing a link to meet the needs of Central Florida consumers plus the aviation fuel demands of Orlando International Airport. Petroleum and related products continue to represent the largest-volume commodity sector at the Port of Tampa, with some 16 million tons of oil, gas and jet fuel moving through the port in a typical year.[19]
  - Because of the relatively cheap, plentiful natural gas supplies associated with 'FRACK technology', the FEIS should address the likelihood of the transportation sector converting to natural gas similar to that occurring in the electrical power generation industry.[20]

> *For example the largest railway in the United States, BNSF is considering switching to natural gas and is developing a locomotive that runs on diesel and natural gas. General Electric and Caterpillar are developing locomotives to run on liquefied natural gas. In five years, natural-gas powered trains could begin to take over rails. BNSF estimates it is the second-largest consumer of diesel in the U.S. behind the U.S. Navy. If it switches to natural gas, this may represent a big blow to diesel.*[21]

- **Alternative Plan Evaluations** - The explanation of the USACE's use of four accounts (*National Economic Development*, *Environmental Quality*, *Regional Economic Development*, and *Other Social Effects*) to evaluate alternative plans is useful.
  - The FEIS should demonstrate how these four accounts were applied to the alternatives analysis (final array) to facilitate understanding of the tentative selected plan determination. It is unclear how the NED, EQ, RED, and OSE were affected by each alternative in the final alternative array analysis.
    - As part of the demonstration, the FEIS should explain the criteria used to determine each *account*.

- For example, which *account* considers the surge/sea-level impacts to the surrounding community or the potential air quality impacts to Environmental Justice communities and other sensitive populations including areas where children tend to congregate? For example,
  - EQ - this account appears to be limited to the seagrass and hardbottom impacts. EPA would also consider direct, indirect, and cumulative impacts to public health and safety associated with the proposed action to be a potential environmental impact (e.g., changes in flooding patterns, cumulative effects with sea level rise and storm surges, impacts to drinking water supplies associated with saltwater intrusion, etc.).
  - RED - this account appears solely focused on impacts to job creation and existing jobs but does not describe the type and value of the jobs created, how existing jobs are benefited, or provide information to support jobs created and benefited conclusions.
  - NED - the FEIS should explain the $4 million net benefit value by discussing how the national economy been benefitted by the proposed action's cost. For example,
    - Does the NED account the dollar value of each commodity imported in context of the proposed action's cost? The project benefits should identify underlying assumptions including any bias to low value or high value goods.
    - Does the NED account for speed and reliability of delivery or just delivery cost? The West Coast, which has built up its container yards and highway and rail infrastructure, may deliver goods faster to the East Coast than goods traveling by ship through the Panama Canal.[22, 23]
    - Does the NED account for the new vessels too big to pass through the new Panama Canal locks? For example, Los Angeles is already processing some of the biggest vessels on water and that are now too big to pass through the newly expanded Panama Canal locks.[24]
    - The FEIS should explain how or what part of the national economy stands to benefit from the proposed action. The DEIS indicates the tentatively selected plan demonstrates the second highest net benefits and the highest benefit cost ratio. There is no context provided to explain this in perspective of the change in the national economic value of the national output of goods and services.
- The FEIS should explain what the DEIS means when it states that the NED, EQ, RED, or OSE objectives have been fully or partially met, or did not meet the federal objective (Table 3-5).
- The FEIS should explain how the NED calculation differs from the RED calculation – what is the actual difference in national economic and regional economic benefits? Is the NED based solely on transportation costs? Is the RED solely based on job creation and improvements to existing jobs?
- The FEIS should clarify the RED's definition of registering changes in distribution of regional economic activity. Does the RED look at the effects of the proposed action in context of other neighboring port deepening and improvement projects or competition between ports?
- The DEIS (p. 3-16) indicates 15.3 jobs for every $1 million of expenditure will be created and 1,430 jobs will be positively impacted from construction expenditures.

- The FEIS should clarify how many actual jobs will be created as it is difficult to determine from the information provided in the DEIS.
  - The FEIS should explain how to interpret Table 4-4.
    - Table 4-4 indicates the total costs including interest is $96 million.
    - Table 4-4 also provides a total average annual cost. Is the total average annual cost in addition to the $96 million?
    - How is the *jobs created* number calculated? Is it 15.3 times $96 million or 1,469 jobs? Or must the reader multiply the average annual costs by the 50-year project life, which is $215 million then add to the $96 million total costs with interest, for a total of $311 million, or 4,748 jobs?
- The FEIS should contrast the new job creation in context of the Port's current employment (including indirect) of approximately 2,400 people[25] so the full value of the expenditures can be appreciated (i.e., Benefits).
- The FEIS should clarify the significance of the new jobs created in context of both the NED and RED. For example how significant is the creation of 15.3 jobs for every $ million of costs nationally and regionally? The DEIS does not discuss if these new jobs are permanent or temporary, low wage or high wage, skilled or unskilled, etc.
- The FEIS should explain how the existing 1,430 jobs will be positively impacted to fully demonstrate the value of the proposed action. See also Editorial, **Support DEIS Conclusions** comments below.
- The FEIS should explain how jobs will be increased and existing jobs positively impacted when the focus is to reduce the number of vessel calls (i.e., increase transportation efficiencies), when the commodity forecast analysis do not appear to indicate growth. Consequently, the assumption that a drop in the number of vessels calling but shipping the same or less commodities may detrimentally impact jobs servicing these vessels such that existing jobs are in actuality may be lost or that employment gains projected for the future may not be realized.

- **Petroleum:** The FEIS should clarify whether the demand for petroleum is driving larger vessels to call or whether the proposed action's implementation will allow larger vessels to arrive albeit light-loaded because of decreased demonstrated petroleum demand (Section 5.2.3).
  - The DEIS indicates the proposed action's implementation will likely result in larger petroleum vessels to call at the Port[26] but is unclear whether it is the demand for petroleum driving larger vessels to call, which is driving the demand for a deeper port.
  - In earlier sections the DEIS indicated that the 2067 forecasted import of petroleum is significantly less than the 2001 peak of 1,350 metric tons (Figure 2-2).
  - Table 2-1 indicates petroleum tankers and asphalt barges average 38 and 5 calls a year, respectively. This number of calls appears inconsistent with the 348 metric ton forecast for 2067, particularly when contrasted by the number of calls made by molasses tankers and cement vessels (5 and 8, respectively) which transport a tonnage similar to 348 metric tons projected for petroleum. The FEIS should discuss Section 5.2.3 in context of Table 2-1 information.
  - The FEIS should clarify whether the general increase of vessel size associated with the proposed action's implementation will realize lightly loaded vessels calling 38 (petroleum) and 5 (asphalt) times a year or will it realize fewer vessels calling but importing petroleum and asphalt fully loaded.

    - The FEIS should explain the impact to the Ports' supporting infrastructure and jobs associated with a decreased number of vessels importing petroleum and asphalt, including how these potential port changes are accounted for in the National and Regional Economic Development (NED & RED) analyses.
    - Additionally, the FEIS should also describe the Port's ability to provide sufficient bulk petroleum storage facilities to compete with sister ports that have these facilities and supporting infrastructure in place (e.g., Ports Everglades, Canaveral, and Tampa).
- **Molasses:** The FEIS should clarify whether the demand for molasses is driving larger vessels to call or whether the proposed action's implementation will allow larger vessels to arrive albeit light-loaded because of decreased molasses demand (Section 5.2.3).
    - The DEIS indicates the proposed action's implementation will likely result in larger vessels shipping molasses to call at the Port[27] but is unclear whether it is the demand for petroleum driving larger vessels to call, which is driving the demand for a deeper port.
    - In earlier sections the DEIS indicated the 2067 forecasted molasses demand is not expected to increase above the 2002 peak (Figure 2-2) and molasses tankers average 8 calls a year (Table 2-1).
    - The FEIS should clarify whether the general increase of vessel size associated with the implementation of the proposed action will realize lightly-loaded vessels calling 8 times a year or will realize fewer vessels calling but exporting molasses fully loaded.
        - The FEIS should explain the impact to the Ports' supporting infrastructure and jobs, if fewer vessels call at the Port to export molasses. The FEIS should discuss how these port impacts are accounted for in the National and Regional Economic Development (NED & RED) analyses.
- **Cement:** The FEIS should clarify whether the demand for cement is driving larger vessels to call or whether the proposed action's implementation will allow larger vessels to arrive albeit light-loaded because of the small forecasted increase in cement demand.
    - The DEIS indicates cement carriers will likely be larger vessels drawing deeper drafts. The FEIS should clarify whether if these vessels will be arriving light-loaded, and if they will still draw deeper drafts.
    - In earlier sections the DEIS seems to indicate the demand for cement is forecasted to increase by 90 metric tons in 2067 above the 1997 peak of approximately 250 metric tons (Figure 2-2). Table 2-1 indicates cement tankers average 5 calls a year.
    - The FEIS should clarify whether the general increase of vessel size associated with the implementation of the proposed action will realize lightly-loaded vessels calling 5 times a year or will realize fewer vessels calling but exporting cement fully loaded.
    - The FEIS should explain the impact to the Ports' supporting infrastructure and jobs if fewer vessels call exporting molasses and importing petroleum and cement. The FEIS should discuss how these port impacts are accounted for in the National and Regional Economic Development (NED & RED) analyses.

General comments

- **Proposed Action Description:** The FEIS should include a paragraph describing the proposed action. See Editorial comment below regarding improving the reader road map.
    - The deepening aspect is the most clearly defined.

  - The widening component is unclear. Figure ES-4 and Table 1-1seem to indicate it is the Main Turning Basin being widened. However, Chapter 3 indicates the channel is being widened. Figure ES-3 depicts a figure insert showing 3 widening alternatives.
  - The stand-alone improved maintenance feature to reduce operation and maintenance dredging and jetty stabilization needs are not described until Chapter 3 but is proposed as part of the project need.
- **Consistent use of Terminology:** EPA recommends that the FEIS should be consistent in its use of terminology because the DEIS' inconsistent terminology generally confuses the reader unfamiliar with the Corps' process.
  - Figure 2-1 refers to *petroleum products*, Figure 2-2 refers to *fuel oil*, Figure 2-3 refers to *liquid petroleum products*, Table 2-1 refers to liquid *petroleum* then adds a new petroleum product, asphalt. Figure 2-6 refers to *tanker petroleum*. The reader is uncertain whether all these terms are referring to the same product or just reflect data available for a subset of product, but different products. The FEIS should address these inconsistencies.
  - Figure 2.1 defines *other* to include four commodities. Figure 2-2's *other* category appears to be differently defined than Figure 2.1's. Figure 2.3 has no *other* category.
  - In Section 3.9, the DEIS introduces four federal accounts in context of the federal objective (p. 3-14). In Section 3.9, the DEIS interchanges the word *accounts* and *objectives*, e.g., the Section 3.9 *NED account* appears to be referred to as the Section 3.9 *NED objective* which appears not to be the Section 3.9 *federal objective* nor the Section 3.4.2 objectives.
- **Current Data:** The FEIS should use more current economic data, 2009 – 2012, instead of relying on 2007 and 2008 data to support the proposed action's need.
- **Use Parameters Allowing Direct Comparisons:** The FEIS should translate tonnage and TEUs used to describe the port's use in context of vessel characteristics (e.g., draft, length and width) to facilitate understanding of the proposed need for the project. Figure ES-3 emphasis the importance of considering vessel design dimensions when developing alternatives yet the economic need described in Chapter 2 discusses it in context of tonnage and TEUs.
  - For example the DEIS indicates during the period1996 – 2004, total major bulk cargo grew from 1.71 million metric tons to 2.42 million metric tons for a combined annual growth rate of 4.42 percent. The FEIS should relate this volume increase in context of TEUs and vessel type categories since the proposed action is focused on channel deepening and widening.
  - The FEIS should define TEUs to facilitate understanding of the project need.
  - Figure 2-5: Vessel **Movements** by draft – the FEIS needs to explain its relevance and context to the narrative and Figure 2-4: Annual Vessel **Trips** and Figure 2-6: Benefitting Vessel **Call** Forecasts (i.e., Is a "movement" a "trip" or a "call?" Is a "trip" a "call?").
- **Support DEIS Conclusions:** The FEIS should include sufficient narrative to support DEIS conclusions where it references documents or studies which were not included in the DEIS. (i.e., the FEIS should briefly describe the result of a study while providing a study cite to allow anyone to seek out the study).
  - For example, the FEIS should provide data to support the DEIS' statement, *"movements that are 27 feet of draft and above have remained steady from 2006 through 2010"* (p. 2-5). The DEIS information appears to be inconsistent with this statement.

- Figure 2-4 provides total annual vessel trips for the 1996 – 2010 period but does not differentiate these trips by vessel characteristics, i.e., sailing at drafts 27 feet or greater.
- The DEIS states any calls with sailing drafts at 33 feet or more are draft and tide constrained (p. 2-5).
- Figure 2-1 provides data on the number of vessel calls by commodity type. Of the commodity types listed in Figure 2-1, Table 2-1 indicates only the molasses tanker drafting at 34.5 feet currently sails at drafts 33 feet or more and subject to draft and tide constraints.
- Figures 2-2 and 2-3 indicate molasses shipments have decreased significantly from their peak in 2002.

o Figure 2-1 indicates the commodities of containerized goods and general cargo constitute 40 percent of the port tonnage and 90 percent of the vessels calling at the port. Moreover, Figures 2-2 and 2-3 indicate these commodities are the only commodities demonstrating growth and Table 2-1 indicates these commodities are shipped in an average design draft vessel of 14.3 feet. Moreover, the Port's largest client, Tropical Shipping's (containerized commodity shipper) newest vessel purchased in 2011, the Tropic Express, was designed to be a shallow draft vessel carrying 368 TEU.

o The DEIS indicates impacts to vegetative communities as a result of continued Operations and Maintenance (O&M) activities were discussed in previous NEPA documents for Palm Beach Harbor (Chapter 1, Related Documents), would remain valid, and are incorporated by reference into the DEIS. The FEIS should fully describe what these impacts are.

o Benthos Impacts: The DEIS indicates continuing to perform O&M dredging at the currently authorized depths, including the existing settling basins, would result in impacts to benthos as discussed in previous NEPA documents for Palm Beach Harbor (Chapter 1, Related Documents) (P. 2-36). The FEIS should fully describe what these impacts are.

o Nearshore Placement: The DEIS indicates placement of material in the nearshore has been evaluated in previous NEPA documents and the effects are incorporated by reference (Section 5.4.3). The FEIS should summarize what the effects are.

- **Inconsistencies:** The FEIS should address inconsistencies in the DEIS. Correcting and addressing these issues will also potentially help meet the USACE's goal for transparency.

o Widening Component: The DEIS induces confusion regarding the proposed action's widening component. The DEIS discusses the nine *initial* widening alternatives, a widening without deepening alternative, and ten deepening with widening alternatives.

- In one section, the DEIS implies each depth alternative may have a different width because the relative width increases three foot per foot of depth increase. The DEIS indicates the width change over 10 feet depth increase is very small compared to the needed width but does not provide the width dimension to facilitate understanding of the alleged smallness of the width changes per foot of depth.
- In another section, Section 3.10 the DEIS includes a statement that the widening is the **same** for *each alternative*, which is inconsistent with the statement: *the ultimate top width is dependent upon the final depth* (p.3-14). Furthermore, Section 3.10's language *each alternative* does not exclude the no action alternative. Because of the proposed action, the 'no action' alternative would be expected to have a different width than the alternatives evaluated.

o Inconsistent BCRs and Costs: The FEIS should address the inconsistencies in the DEIS tables 3-3 (Section 3.8, p. 3-13) and 4-4 (Section 4.9.2, p. 4-23). Table 3-3 depicts the

TSP with an average annual cost of $3,311,091 and a BCR of 2.21 while Table 4-4 depicts (with no explanation) an average annual cost of $4,280,000 and a BCR of 1.71. The FEIS should fully explain how and why the annual costs go up and the BCR goes down between the two tables and any assumptions being made in the economic forecasts.

- **Provide a brief explanation of the models selected and why selected.** For example, the DEIS indicates the Habitat Equivalency Analysis and UMAM were used but does not explain why or the appropriateness for using them over other models, what the 'modelx' cannot do, the underlying assumptions of these models, and the degree of uncertainty in the models' results. EPA generally agrees that the details of how it is used and the data collected for the model is appropriate for placement in the appendix.
- **Hard bottom habitat**. Section 5.5.4 states: "*The areas to be impacted and their functional value are discussed in earlier sections of this EIS and the Habitat Equivalency Analysis found in the Mitigation Plan Attachment*". The DEIS is targeted for resource agencies and the public. The FEIS should specify where the earlier sections are located.
- **Ecosystem function:** The definition of function and functional values in context of ecosystem and seagrass is poorly defined to be meaningless as is the definition of Ecosystem in the glossary.
- **Table of Contents:** The DEIS Table of Contents is difficult to read. EPA recommends that the FEIS Table of Contents be presented in a more simplified and more organized manner.
- **Foldouts Use:** The document should provide a guide as to how to use the foldouts and alert the reader where they are and when they will be useful.
  - Chapter 5 attempts to do this but not very clearly.
  - The last page of the document has a fold out depicting 3 scenarios: existing conditions (Chapter 2), existing conditions plus widening scenarios (Chapter 3) , and the TSP (Chapter 4), but it does not appear to be referenced in any of the Chapters – 2, 3, or 4
  - See also Editorial Comments, FS/NEPA Integration comments below regarding road map.

Air Quality

- Section 2.5.10 of the DEIS describes existing conditions regarding air quality in the general project study area and region.
- The DEIS states that the air quality within the project area is generally good due to low emission activity and the presence of offshore breezes.
- The DEIS does not include any identified sources of emissions or emissions data from the Port.
- Table 2-8 includes Annual Mean Air Quality data for Palm Beach County for 3 years (2009, 2010 and 2011) for several primary air pollutants. Because this table lacks units, it provides no value for the purposes of establishing the existing or background air quality conditions.
- Section 5.5.9 of the DEIS includes a general discussion of future with-project conditions (TSP) for air quality. This section lacks supporting data, estimated emission projections based upon increased port activities such as construction and increased loading and unloading of goods, larger ships utilizing the Port, and increased local traffic associated with the projected growth in jobs created.

- The FEIS should include an 'estimated' emissions inventory for the Port, including stationary and mobile pollutant sources from diesel and gasoline powered engines. The baseline inventory should include cargo carrying vessels, harbor craft, landside cargo handling equipment, trucks, and other current emission sources of criteria pollutants, diesel emissions (e.g., Ozone, Carbon monoxide, PM2.5) and air toxics (e.g., Benzene, Acrolein, etc.).
- The FEIS should provide a realistic projection of the future emissions (to the design year 2067) from stationary and mobile sources using approved air models. EPA can provide general technical assistance through Mr. Alan Powell, 404-562-9045 or powell.alan@epa.gov for the USACE in order to develop a relevant air quality assessment for the Port.
- The FEIS might also include a general air quality analysis for air toxics for neighborhoods and communities near the Port or along major transportation routes to and from the Port.
- The FEIS should identify any future plans to convert diesel powered equipment to electric equipment, any future plans to convert to low-sulfur diesel fuels, and any future plans to monitoring air quality in and around the Port and nearby neighborhoods and communities.

Storm Surge Impacts

- Existing Conditions – the FEIS should describe storm surge impact based upon existing conditions (i.e., low and high tides, including previous histories of major storm surge impacts; Section 2.3.4).
  - For example while the DEIS indicates generally, *"2.5 ft of tide or greater is available about 32% of the time, and 3 ft of tide or greater is available about 15% of the time"*, it does not discuss this tide information in the context of storm surge impacts to the proposed action and the neighboring area and infrastructure.
  - Palm Beach County's coastal areas are susceptible to storm-surge flooding. This includes the sudden and massive build-up of water levels by the force of onshore winds produced by tropical storms, hurricanes, and northeasterners. Water levels of 12 feet or more can overflow normally dry lands with devastating results. The northern and southern coastal areas of the county are somewhat more susceptible to surge flooding than are the central sections.[28]
  - Flooding, erosion, and salt-water intrusion through the porous limestone outcrops into already intruded drinking water supplies is potentially a significant concern associated with this project that has not been adequately addressed in the DEIS.
    - Potential erosion impacts, associated with the proposed widening in context of storm-related surges, upon surrounding properties and public infrastructure should be identified and discussed in the FEIS.
- **Proposed Action Conditions** (Section 5.3.4): The FEIS should discuss how the proposed channel deepening and widening to facilitate deeper draft and wider vessels, which also facilitates the transfer of larger volumes of water inland, particularly during large, slow moving storm events.
  - The FEIS should explain what a 0.328 difference means in context of the surrounding area (infrastructure, homes, businesses, etc.) in context of Florida being at or below sea level.

- Britton Hill, in the Florida Panhandle, is the highest point in Florida, at 345 feet above sea level. The lowest point in Florida is sea level at the Atlantic Ocean.[29]
- The FEIS should address how the proposed impacts affect existing areas already susceptible to storm-surge flooding during the proposed project's design year of 2067.
- The FEIS should evaluate the proposed action (TSP) compared to the 'no action' alternative during low level storms in relation to storm-surge impacts.
- The FEIS might also include appropriate mitigation where reasonable and prudent (e.g., requiring the applicant to contact the local county's emergency management program to allow them to update their storm-surge flood maps and evacuation procedures, increasing stormwater retention basin areas at the Port, etc.).

- The FEIS should discuss how the storm-surge impact analysis was performed, the assumptions made, and confidence in any model derived results.
  - Did the DEIS analysis include worst case scenarios? (e.g., slow moving, category 5 hurricane occurring at a high tide with the three sea-level rise scenarios discussed in Section 2.33: baseline, intermediate, and high over the 50-year project life).
  - Did the DEIS analysis use the ADCIRC storm surge simulations? (e.g., the USACE study: *Surge Sensitivity Analysis for Sabine Neches Water Way Navigation Project* by Ty V. Wamsley, Mary A. Cialone, and Tate O. McAlpin, March 2010).[30]
  - The DEIS did not identify where and what the changes in peak surge would occur (e.g., in the area associated with the proposed action: infrastructure, commercials areas and residences, the barrier island, etc.)
- The FEIS should describe the cumulative effect of storm-surge and sea level impacts based upon the three sea-level rise scenarios discussed in Section 2.33, baseline, intermediate, and high over the 50-year project life (p. 2-17).
  - The DEIS does not include storm surge and sea level rise as cumulative effects associated with the proposed widening and deepening of the harbor in the Cumulative Impacts Section (5.5.4). The cumulative impact of a major storm, (e.g., a slow moving category 5 hurricane, at a high tide, with an increased sea-level rise: the high scenario) in the context of land subsidence upon the surrounding infrastructure, homes, businesses and other facilities, is a potential environmental concern.

Dredged Material Disposal

EPA notes a modeling study will be conducted prior to pre-construction engineering and design and will expand the site as necessary. Based on modeling done at Ports Everglades and Miami, EPA anticipates the need to expand is unlikely for the 1.4 million cubic yards of material projected for the Offshore Dredged Material Disposal Site (ODMDS).

- **ODMDS status:** The FEIS should update status of the existing ODMDS. The ODMDS was used this year as part of O&M activities (Section 2.4.3).
- **Nearshore placement of dredged material:**
  - The FEIS should clarify what types of material (e.g., rock, clay, silt, contaminated sediments) can be placed nearshore and the seaward extent of the nearshore placement site.
    - The DEIS states non beach-quality material can be placed nearshore in depths greater than the mean high water line. This implies mud could be placed in 60 feet of water two miles offshore on top of coral reefs so long as the surface is not breached. (Section 2.4.3)

- In Table 3-1, the DEIS states two different placement sites will be used: sand will be placed in the nearshore while consolidated material will be placed in the ODMDS. (p. 3-9)

- The FEIS should clarify how far offshore, *nearshore* placement can or will occur. The DEIS indicates approximately 113,000 yards^3 would be used for sea grass mitigation and another 450,000 yards^3 of sand would be placed in the *nearshore* south of the inlet. (Section 4)
- The FEIS should address the regulatory requirements for all open-water placement of dredged material (e.g. nearshore, filling of anoxic holes, in water habitat creation) not placed in a regulatory designated site, i.e., ODMDS. Open-water placement of dredged material a is regulated activity under Section 404 of the Clean Water Act subject to a 404(b)(1) Evaluation.
- The FEIS should address the suitability of the dredged material to be used for seagrass mitigation from a toxicity perspective.
- The FEIS should address whether the use of the existing ODMDS will increase with the implementation of the TSP. The ODMDS has been used very little for operation and maintenance dredging of the existing Palm Beach Harbor project. (Section 5.4.3)

Water Quality Comments

- **Seagrass Mitigation:** The FEIS should discuss whether the dredged material used in the seagrass mitigation will impact water quality and be consistent with the Clean Water Act's requirements.
- **Salt Water Intrusion:** The FEIS should, because southern Florida from Palm Beach to Miami is among the areas especially vulnerable to saltwater intrusion into municipal freshwater supplies associated with sea-level rise,[31] address cumulative effects associated with the proposed action.
  - Rising sea level is expected to increase the hydraulic backpressure on coastal aquifers, reduce groundwater flow toward the ocean, and cause the saltwater front to move inland, thus, threatening to contaminate coastal-area water-supply wells.
    - Porous limestone geology allows for movement of salt water underground and inland.
      - The DEIS indicates the entrance harbor is an artificial cut through the barrier beach and limestone formation connecting the costal lagoon, Lake Worth with the Atlantic Ocean (Section 2.1).
      - The proposed action includes a widening component. Limestone rock outcrops are found on either side of the Federal channel at the interface between the inlet and the Intracoastal Water Way (Section 2.1).
      - Hardbottom habitat occurs along the limestone walls of the entrance channel (Section 2.5.5).
      - Figure 4-1 Material Classification (p. 4-3) indicates in Area C (Main channel) and D (turning basin) outcrops of limestone and inter-fingering limestone beds with sandstone.

Mitigation

- The DEIS lacks specific details about the potential mitigation sites (i.e., Borrow holes).

- The DEIS identifies the potential need to mitigate between 8.25 and 11.25 acres of seagrass impacts and between 4.9 and 9.8 acres for hardbottom impacts.
- The FEIS should identify with greater certainty the extent of the 404 impacts shown above.
- EPA requests that a specific mitigation plan be included in the FEIS that addresses long-term protection of mitigation sites, the BMPs to be employed during creation/restoration, specific success criteria, identification of the mitigation reference site, proposed mitigation ratios, and any proposed enhancements to species diversity (not solely seagrass counts/coverage).

Editorial Comments

- **FS/NEPA Integration:** EPA supports the USACE's efforts to integrate the Feasibility Study with the NEPA-required environmental study. However, the combination of the two documents should be executed in a clear, organized fashion such that the combined document facilitates a clear understanding of the problem and makes a clear comparison of the impacts between the reasonable and feasible alternatives.
- The FEIS should explain the Feasibility Study terms in context of the NEPA terminology. This could be accomplished with a brief introductory paragraph explaining the overlap between the Feasibility and NEPA requirements with an explanation of how the Feasibility Study and NEPA requirements are being met.
- EPA recommends that the USACE improve the overall organization and clarity in the FEIS. The DEIS references studies or items in appendices but does not provide a summary of how these studies support the conclusion. The DEIS also makes conclusions but does not always provide supporting information explaining the conclusions made. The FEIS should address these issues (e.g., No executive summary, Chapter 1 lacks adequate introductory information, etc.) from the DEIS, including the format (Please see: 40 CFR § 1502.2 and § 1502.10).

- **ES figures:** EPA finds the foldout figures labeled 'ES' utilize professional graphics and are generally helpful to give the reader a final summary of the project (after having reviewed the DEIS). However, EPA recommends that these figures should not be used as a total substitute for a clear and concise written executive summary.
- **Figure 2-3:** *Future Commodity Movement Forecasts* date range is mislabeled as 2009 – 2067 when the x axis actually starts at 2017 instead of 2009. (p. 2-5)
- **Figure 3-4:** *Jetty Concept* – lacks both the identifiers for the vertical and horizontal parameters to facilitate understanding of the diagram. (p. 3-11)
- **Summary of Initial Array of Alternatives**: Figures 3-1 and 3-2 are difficult to read to understand the differences between widening plans 1 and 2. (p. 3-7)

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[1] http://www.palmbeachpost.com/news/news/ports-top-tenant-tropical-shipping-downsizes-as-ca/nLpZY/
[2] http://www.portofpalmbeach.com/about-us/
[3] See page 2-14, Future Without-Project Conditions (No Action Alternative): Commodity and Fleet.
[4] http://pyramid.delislewalwyn.com/index.php?option=com_content&view=article&id=96:tropical-shipping-launches-its-newest-vessel-mv-tropic-express&catid=54:edition-5
[5] https://www.tropical.com/NR/rdonlyres/456472F6-EF7A-4DC8-9964-ECBAD1A214E1/0/Face_sheet_Vesse_Specifications.pdf

[6] https://www.tropical.com/External/En/Contact/USA/Miami+Florida+Locations.htm
[7] Florida Seaports: charting our future: Port Florida Seaports: charting our future: Port Palm Beach Harbor at http://www.flaports.org/Sub_Content3.aspx?id=22&pid=3
[8] Florida Seaports: charting our future: Port Miami at http://www.flaports.org/Sub_Content3.aspx?id=21&pid=3
[9] Florida Seaports: charting our future: Port Everglades at http://www.flaports.org/Sub_Content3.aspx?id=15&pid=3
[10] http://www.daybreakexpress.com/fl-ports/florida-portfreight.htm
[11] https://www.tropical.com/external/en/Contact/USA
[12] http://www.bizjournals.com/southflorida/stories/2010/02/08/daily38.htm
[13] www.portcanaveral.org
[14] www.tampaport.com
[15] http://www.tampaport.com/cargo/bulk-cargo.aspx
[16] Florida Seaports: charting our future: Port Everglades at http://www.flaports.org/Sub_Content3.aspx?id=15&pid=3
[17] http://www.daybreakexpress.com/fl-ports/florida-portfreight.htm
[18] www.portcanaveral.org
[19] http://www.tampaport.com/
[20] See: http://www.c2es.org/publications/natural-gas-use-transportation-sector
[21] http://www.smartplanet.com/blog/bulletin/railway-giant-considers-switch-to-natural-gas/14262
[22] http://www.nytimes.com/2012/08/21/us/us-ports-seek-to-lure-big-ships-after-panama-canal-expands.html?pagewanted=all&_r=0
[23] According to a USDA study, transit time from the West to the East Coast by rail is six days and the total time from Asia to the East coast is approximately 18.3 days. See: *Impact of Panama Canal Expansion on the U.S. Intermodal System* (January 2010) available at http://www.ams.usda.gov/AMSv1.0/getfile?dDocName=STELPRDC5082003
[24] http://www.nytimes.com/2012/08/21/us/us-ports-seek-to-lure-big-ships-after-panama-canal-expands.html?pagewanted=all&_r=0
[25] www.portofpalmbeach.com
[26] DEIS Section 5.2.3 – liquid petroleum, p. 5-4.
[27] DEIS Section 5.2.3 – sugar and molasses, p. 5-4.
[28] http://www.pbcgov.com/dem/floodawareness/floodinformation/primarycause.htm
[29] http://www.netstate.com/states/geography/mapcom/fl_mapscom.htm
[30] Available at http://ww3.swg.usace.army.mil/pe-p/SNWW/Doc/2Sabine%20Surge%20Final%20Draft%203-22-10.pdf
[31] *Climate Change and Sea-Level Rise In Florida: An Update Of The Effects Of Climate Change On Florida's Ocean And Coastal Resources* (December, 2010) http://www.floridaoceanscouncil.org/meetings/files/2010/11-08/SLR_1108.pdf

U.S. ENVIRONMENTAL PROTECTION AGENCY
ENVIRONMENTAL IMPACT STATEMENT (EIS) RATING SYSTEM CRITERIA

EPA has developed a set of criteria for rating Draft EISs. The rating system provides a basis upon which EPA makes recommendations to the lead agency for improving the draft.

RATING THE ENVIRONMENTAL IMPACT OF THE ACTION

$ LO (Lack of Objections): The review has not identified any potential environmental impacts requiring substantive changes to the preferred alternative. The review may have disclosed opportunities for application of mitigation measures that could be accomplished with no more than minor changes to the proposed action.

$ EC (Environmental Concerns): The review has identified environmental impacts that should be avoided in order to fully protect the environment. Corrective measures may require changes to the preferred alternative or application of mitigation measures that can reduce the environmental impact.

$ EO (Environmental Objections): The review has identified significant environmental impacts that should be avoided in order to adequately protect the environment. Corrective measures may require substantial changes to the preferred alternative or consideration of some other project alternative (including the no action alternative or a new alternative). The basis for environmental objections can include situations:

1. Where an action might violate or be inconsistent with achievement or maintenance of a national environmental standard;
2. Where the Federal agency violates its own substantive environmental requirements that relate to EPA's areas of jurisdiction or expertise;
3. Where there is a violation of an EPA policy declaration;
4. Where there are no applicable standards or where applicable standards will not be violated but there is potential for significant environmental degradation that could be corrected by project modification or other feasible alternatives; or
5. Where proceeding with the proposed action would set a precedent for future actions that collectively could result in significant environmental impacts.

$ EU (Environmentally Unsatisfactory): The review has identified adverse environmental impacts that are of sufficient magnitude that EPA believes the proposed action must not proceed as proposed. The basis for an environmentally unsatisfactory determination consists of identification of environmentally objectionable impacts as defined above and one or more of the following conditions:

1. The potential violation of or inconsistency with a national environmental standard is substantive and/or will occur on a long-term basis;
2. There are no applicable standards but the severity, duration, or geographical scope of the impacts associated with the proposed action warrant special attention; or
3. The potential environmental impacts resulting from the proposed action are of national importance because of the threat to national environmental resources or to environmental policies.

RATING THE ADEQUACY OF THE ENVIRONMENTAL IMPACT STATEMENT (EIS)

$ 1 (Adequate): The Draft EIS adequately sets forth the environmental impact(s) of the preferred alternative and those of the alternatives reasonably available to the project or action. No further analysis or data collection is necessary, but the reviewer may suggest the addition of clarifying language or information.

$ 2 (Insufficient Information): The Draft EIS does not contain sufficient information to fully assess environmental impacts that should be avoided in order to fully protect the environment, or the reviewer has identified new reasonably available alternatives that are within the spectrum of alternatives analyzed in the Draft EIS, which could reduce the environmental impacts of the proposal. The identified additional information, data, analyses, or discussion should be included in the Final EIS.

$ 3 (Inadequate): The Draft EIS does not adequately assess the potentially significant environmental impacts of the proposal, or the reviewer has identified new, reasonably available, alternatives, that are outside of the spectrum of alternatives analyzed in the Draft EIS, which should be analyzed in order to reduce the potentially significant environmental impacts. The identified additional information, data, analyses, or discussions are of such a magnitude that they should have full public review at a draft stage. This rating indicates EPA's belief that the Draft EIS does not meet the purposes of NEPA and/or the Section 309 review, and thus should be formally revised and made available for public comment in a supplemental or revised Draft EIS.